

Features of Surgical Correction of Complicated Forms of Cholelithiasis in the Elderly and Senile Age

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Resume. The results of treatment of 171 elderly and senile patients with complicated forms of GCB are presented. Stage surgical treatment, taking into account the developed criteria for assessing the severity of the patient's condition and the projected risk of developing postoperative complications using preliminary minimally invasive decompression interventions on the biliary tract performed in 42.2% of patients of the main group, made it possible to stop purulent-cholemic intoxication, improve the results of subsequent radical operations. In 15.6% of patients, these interventions were the final method of treatment. The priority staged use of minimally invasive interventions significantly reduced mortality, postoperative purulent-septic and extra-abdominal complications (3.1%, 12.4% and 29.9%, respectively), while in the comparison group these indicators were 8.1%, 32.4% and 41.9%.

Key words: cholelithiasis, complications, elderly and senile age.

Patients with complicated forms account for 54 - 65% of the number of patients admitted to hospitals for cholelithiasis (GCB). Among patients operated on with acute inflammation of the gallbladder, elderly and senile patients account for up to 30% (1,4,6,7,9). Along with severe complications of acute inflammation of the gallbladder in patients of older age groups, lesions of the bile ducts are frequent (35-60%). In the structure of lesions of the bile ducts, the main place is occupied by choledocholithiasis, accounting for 50 - 78% of all types of pathology (2,3,5,8,10). In these patients, the severity of the underlying disease is aggravated by concomitant pathology. At the same time, in the acute period of the disease, the effect of mutual aggravation of the main and concomitant disease is manifested.

In numerous studies, the results of surgical treatment of elderly and senile patients with complications of the gastrointestinal tract do not always satisfy specialists, in 40-65% of cases, patients have septic conditions, as a result of which from 16.5% to 30.0% of observations are fatal (11,12).

Objectification of the assessment of the severity of the condition and the prognosis of the disease is of particular importance for the development of promising areas for the treatment of complications of the gastrointestinal tract as abdominal and biliary sepsis, which is characterized by heterogeneity of clinical manifestations. In recent decades, due to the development of minimally invasive surgical interventions and the introduction of stage surgical tactics, mortality in complicated forms of cholelithiasis in elderly and senile patients This is mainly due to the development of minimally invasive surgical interventions and the introduction of stage-by-stage surgical tactics, the effectiveness of which is recognized by most clinicians.

Objective of the study: To improve the results of treatment of elderly and senile patients with complicated forms of cholelithiasis by optimizing the tactical and technical aspects of surgical correction with the priority use of minimally invasive interventions.

Material and methods. The results of treatment of 171 elderly and senile patients with complicated forms of housing and communal services who were treated in the surgical departments of the clinic of Samarkand State Medical University in the period from 2015 to 2022 years were revised. According to the classification adopted by the WHO Regional Office for Europe (2016), elderly patients (60-74 years) accounted for 143 (83.6%), patients of old age (75 years and older) - 28 (16.4%). The oldest patient in the study was 87 years old. Female patients prevailed - 104 (60.8%), men - 67 (39.2%). The median age was 64.7±3.4 years and the ratio of females to males was 1.5:1.

Of the 171 patients with complicated forms of gastrointestinal disease, 130 (76.1%) were diagnosed with destructive forms of inflammation of the gallbladder, including gangrenous cholecystitis in 56. In the structure of complications of lesions of the bile ducts, the main place was occupied by mechanical jaundice, which was observed in 79 patients (44.4%), of which 51 had a total bilirubin content in the blood serum that exceeded 60 $\mu\text{mol} / \text{l}$.

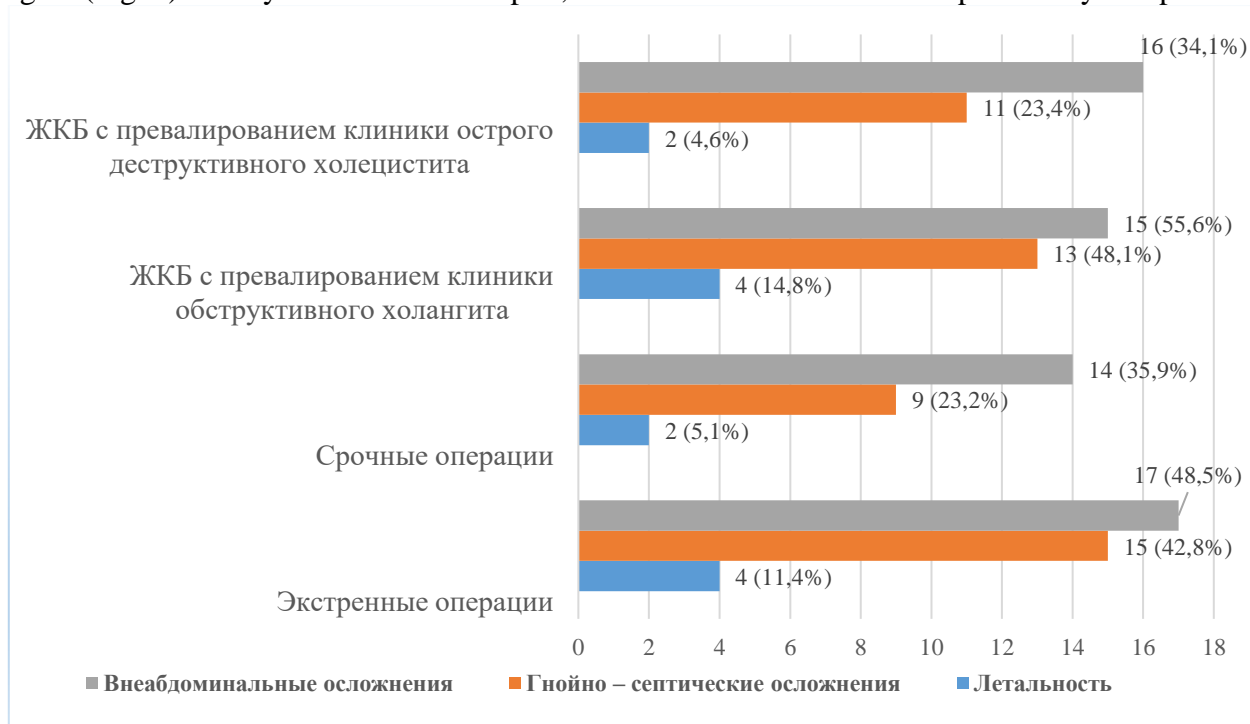
Concomitant pathology was detected in all 171 patients. 135 of them had a combination of 2-3 or more systemic diseases. On average, there were 2.1 concomitant diseases per patient, while in the first age group (60-74 years) - 1.7, and in the second (over 75 years) - 2.4.

Diagnosis was carried out on the basis of the clinical picture of the gastrointestinal tract, laboratory and instrumental research methods (sonography, RPCG, MR-cholangiography).

In accordance with the purpose and objectives of the study, patients are divided into 2 study groups. The comparison group consisted of 74 (43.3%) patients who in the period 2015-2018 were operated on for acute cholecystitis and damage to the bile ducts for emergency and urgent indications. The main group of the study was 97 (56.7%), in which the algorithm for conducting therapeutic and diagnostic measures for indications was based on the principles of priority use of surgical treatment methods with the use of minimally invasive surgical interventions. In the study, both groups of patients were identical both in age and in the severity of clinical manifestations and the severity of the disease.

Of all 74 patients in the control group, 47 (63.5%) had a clinic of acute destructive cholecystitis, and 27 (36.5%) had a clinic of mechanical jaundice and cholangitis due to choledocholithiasis and BDS stenosis. In this group, surgical intervention consisted in performing HE (in 47 patients), or HE with choledocholithotomy (in 27 patients) with external drainage of the choledoch, and the surgical intervention was performed from a wide laparotomy to astupa in 33, from minilaparotomy - 41.

Factor analysis found that the highest percentage of mortality, purulent-septic and extra-abdominal complications (14.8%, 48.1% and 55.6%, respectively) in elderly and senile patients was observed after attempts at simultaneous radical surgical correction of acute destructive cholecystitis or obstructive cholangitis (Fig. 1). biliary and abdominal sepsis, as well as cardiovascular and pulmonary complications.



Rice. 1. The frequency of mortality and postoperative complications depending on the urgency of operations and the complicated clinic of the GCB in gr. comparisons in elderly and senile patients

In the main group of 97 elderly and senile patients operated on in 2019-2022 for complicated forms of GCB, treatment was carried out not only taking into account the severity of acute cholecystitis and

cholangitis according to the classification adopted in Tokyo 2018 (Tokyo Guidelines, 2018, TG18), but also according to the criteria developed by us for predicting the risk of developing postoperative complications.

In accordance with these criteria, 42 (43.3%) patients are classified in the group with moderate severity of the condition and a predicted relatively low risk of developing postoperative complications. 55 (56.7%) patients of this contingent were assigned to the group with a severe clinical course of the disease and a predicted high risk of developing postoperative complications. Patients were operated on taking into account the proposed criteria for the severity of the condition, as well as the clinic of a complicated course of the gastrointestinal tract. (Table 1,2).

With the prevalence of the clinic of acute destructive cholecystitis in the main group of 58 patients, 39 are assigned to the group with a severe clinical course of the disease and a predicted high risk of developing postoperative complications. In 11 of them, biliary peritonitis was ascertained (diffuse in 5, in 6 delimited in the form of a formed biloma).

Table 1.
Surgical interventions in elderly and senile patients with a severe degree of condition and a predicted high risk of postoperative complications (n = 64)

Clinic of the disease	Type of operation		Number of patients	
GCB with the prevalence of the clinic of acute destructive cholecystitis (n = 39)	ЧЧМХС →	LHE	6	17
	ЧЧМХС →	MLHE	2	
	СННМНС + puncture of biloma →	MLHE	6	
	only СННМНС		3	
	MLHE		14	22
	MLHE, dissection of perivesical abscess		3	
	Laparotomy, HE and abdominal debridement		5	
GCB with the prevalence of the clinic of obstructive cholangitis (n = 25)	EPST and NDS →	LHE	4	20
	EPST and NDS →	MLHE	7	
	EPST only		5	
	EPST and СННМНС →	MLHE	2	
	ONLY EPST and СНМНС		2	
	MLHE and choledocholithotomy (if EPST is unsuccessful)		5	5

Table 2.
Surgical interventions in elderly and senile patients with an average severity of the condition and a predicted low risk of postoperative complications (n = 33)

Clinic of the disease	Type of operation		Number of patients	
GCB with the prevalence of the clinic of acute destructive cholecystitis (n = 19)	СННМНС →	LHE	2	4
	СННМНС →	MLHE	2	
	LHE		7	15
	MLHE		8	
GCB with the prevalence of the clinic of obstructive cholangitis (n = 14)	MLHE and choledocholithotomy		14	14

Due to the severity of the condition of 17 patients, percutaneous-transhepatic microcholecystostomy (СННМНС) was performed in stage 1, of which 6 also punctured and sanitized bilomas delimited in the subhepatic space. Stage 2 of treatment for 10-14 days cholecystectomy was performed on 14 patients, of which LHE-6, HE from minilaparotome access-8. 3 patients were discharged without HE with a functioning

cholecystostomy. 22 patients were operated on in one stage. 17 patients with acute destructive cholecystitis underwent MLHE, of which 3 due to the melting of the wall of the gangrenously altered gallbladder (in fact, an autopsy of a perivesical abscess was performed). 5 patients with a clinic of diffuse bile peritonitis underwent HE with rehabilitation of the abdominal cavity from a wide laparotomic access.

19 patients with a clinic of acute destructive cholecystitis with a moderate severity of the condition and a predicted relatively low risk of developing postoperative complications 15 underwent cholecystectomy (7-LCE, 8-HE from mini-access). Two-stage treatment with preliminary cholecystostomy (CHHMHS) was carried out in 4 patients, and 2 with puncture sanitation of the delimited perivesical biloma. These 2 patients were subsequently treated from mini-access. Another 2 patients after microcholecystostomy underwent LHE.

In the group of patients with the prevalence of the clinic of mechanical jaundice and obstructive cholangitis (n = 39) with a severe clinical course of the disease and a predicted high risk of developing postoperative complications, 25 patients are classified. Due to the severity of the condition, 16 (64%) patients with stage 1 treatment successfully performed endoscopic papillosphincterotomy (EPST) followed by nasobiliary drainage (NDD). In 5 (20%) patients, attempts at EPST and NDD installation were unsuccessful. These 5 patients with a progressive clinic of mechanical jaundice and cholangitis produced HE and choledocholithotomy from minilaparotomy access in the right hypochondrium. Of the 16 patients who successfully underwent EPST stage 2 after improvement and relief 11 cholangiogenic intoxication clinics produced HE, of which 4 LCE, 7 patients of HE from minilaparothotom access. 5 patients after successful EPST refrained from radical surgery and they were also discharged from the hospital.

With a combination of the clinic of obstructive cholangitis and acute cholecystitis, 4 patients underwent minimally invasive decompressive transduodenal interventions - EPST with lithoextraction. These patients also underwent CHHMHS. In the future, 2 of them were carried out by MLHE. 2 were discharged from the hospital with a significant improvement in the condition.

14 patients with moderate severity of the condition underwent simultaneous surgical interventions in the volume of HE and choledocholithotomy with external drainage of choledoch from mini-access in the right hypochondrium.

Thus, two-stage surgical treatment was carried out in 27 (42.2%) patients with severe severity of the condition and a high risk of developing postoperative complications. 10 (15.6%) patients were limited to minimally invasive decompression intervention on the biliary tract. A one-stage radical surgical operation was performed in 27 (42.2%) patients, and in 13 (20.3%) it was forced in the presence of a peritonitis clinic (5 patients) or a perivesical abscess (3 patients) or with the failure of EPST.

Two-stagee xsurgical interventions in patients with moderate severity of the condition and a predicted low risk of developing postoperative complications (n = 33) were performed on 4 (12.1%) patients, one-stage radical surgery was performed on 29 (87.9%) patients.

Results and their discussion.

ChHMHS in the surgical treatment of patients with acute cholecystitis was performed by 25 (25.8%) patients of the main study group. Drainage of the gallbladder under the control of ultrasound was carried out through the liver parenchyma site in order to seal the canal and prevent bile leakage into the abdominal cavity. Drainage in all cases was carried out with an "umbrella" stiletto - a catheter with a "basket" at the end, catheter diameter 4F and 9F (Fig. 2).



Rice. 2. Percutaneous transhepatic microcholecystomy under the control of ultrasound scanning

In the group of elderly and senile patients with the prevalence of the clinic of acute obstructive cholangitis, endoscopic papillosphincterotomy was performed only 20 (20.6%) patients. EPST was performed in an endoscopic operating room using a duodenoscope, an electrosurgical unit and a sphincterotome. In addition, it should be noted that in 5 patients, attempts at EPST and NDD installation were unsuccessful, in one case the patient developed acute pancreatitis with a fatal outcome, in another 1 observation duodenal bleeding, which was cured conservatively (Fig. 3).



Rice. 3. Endoscopic papillosphincterotomy and nasobiliary drainage

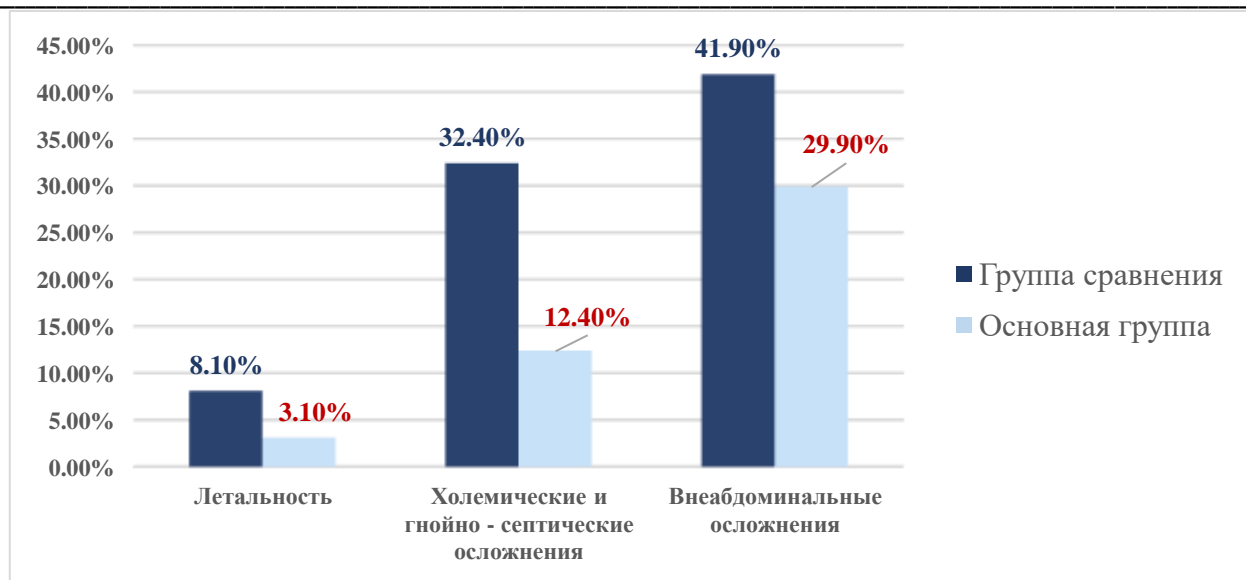
Thus, 2-stage surgical treatment was carried out in 31 patients of the main group, which amounted to 31.9%. These patients, after preliminary minimally invasive decompression of the biliary tract in the second stage for 7-14 days, produced HE, and 12 - LCE, 19 - MLHE.

61 (62.9%) patients of the main study group one-stage radical operation - cholecystectomy was performed both from wide laparotomy access in 5 patients with complications of peritonitis, 49 from minilaparotomy access (and in combination with choledocholithotomy in 19 patients), LHE was performed in 7 patients.

In total, only 19 (19.6%) patients underwent LCE, HE from mini-access 63 (64.9%), from wide laparotomy access 5 (5.1%). It should be noted that 10 patients due to the severity of the condition of HE were not carried out.

LHE was carried out using Karl Storz tools, HE from mini-access with SUN tools.

Anequal analysis of the treatment results in the study groups showed a decrease in mortality and postoperative complications in the main study group of patients (Fig. 4).



Rice. 4. Results of surgical treatment of elderly and senile patients with complicated forms of GCB in comparison groups

The most formidable complications in the control study group of patients were cholangiogenic liver abscesses and biliary sepsis, which was the cause of death in 2 patients. Ongoing peritonitis in 1 more observation also led to an unfavorable outcome. At the same time, in 3 patients, the cause of death was complications from the existing competing comorbid pathology. In 2 observations, the cause of death was stated as acute myocardial infarction. In 1 observation - thromboembolism of the pulmonary artery against the background of postoperative pneumonia. Thus, the mortality rate in the control group of patients (n = 74) was 8.1% - 6 patients died. Of these, 3 of them caused death were abdominal complications - biliary sepsis in 2, abdominal sepsis in 3 deaths due to cardiovascular and pulmonary complications from the existing comorbid pathology.

At the same time, in the main group, 3 out of 97 operated patients died, the mortality rate was 3.1%. The reason for the unfavorable outcome was acute pancreatitis as a complication of transduodenal endoscopic intervention in 1 patient and ongoing peritonitis in 1 observation. In 1 more observation, the cause of death is acute cardiovascular failure due to myocardial infarction

Various cholemic and purulent-septic complications were observed in 24 patients of the comparison group, which amounted to 32.4%. At the same time, 3 (4.1%) formed bilomas in the subhepatic region, which are otherwise enized by recanalization of contraperturs. In 5 (6.7%) patients, bile leakage from drainage tubes was established. x in the subhepatic space, 5 (6.7%) patients underwent repeated operations to open and drain subhepatic and / or subdiaphragmatic abscesses, 2 (2.7%) relaparotomy was performed due to biliary peritonitis. Also, 4 (5.4%) patients were re-operated for cholemic intra-abdominal bleeding. 12 (16.2%) patients had suppuration of the postoperative wound.

In the main study group, postoperative complications developed in 12 patients, which was 12.4%. At the same time, bilomas of the subhepatic region were formed in 3 (3.1%) patients who were successfully sanitized by punctures under the control of ultrasound.

In 3 (3.1%) patients, cholemic bleeding from the liver from the area of the transhepatic puncture of the gallbladder was observed. Externally, bile flow was observed in 3 patients, relaparoscopy in 1 case revealed the insolvency of the stump of the cystic duct, which was re-clipped, in another 2 observations, coagulation of the gallbladder bed as a source of bile flow in the abdominal cavity was performed.

Duodenal bleeding was noted in 1 patient after EPST, bleeding was stopped conservatively - hemostatic therapy. In 2 patients, a subdiaphragmatic abscess was formed, sanitized by repeated punctures under the control of ultrasound. In 4 (4.1%) patients, suppuration of the postoperative wound was observed.

Conclusions.

1. Factor analysis found that the highest percentage of mortality, purulent-septic and extra-abdominal complications (14.8%, 48.1% and 55.6%, respectively) in elderly and senile patients were observed

after attempts at simultaneous radical surgical correction of acute destructive cholecystitis or obstructive cholangitis. The cause of mortality was equally biliary and abdominal sepsis, as well as cardiovascular and pulmonary complications.

2. Stage surgical treatment, taking into account the developed criteria for assessing the severity of the patient's condition and the projected risk of developing postoperative complications using preliminary minimally invasive decompression interventions on the biliary tract performed in 42.2% of patients of the main group, made it possible to stop purulent-cholemic intoxication, improve the results of subsequent radical operations. In 15.6% of patients, these interventions were the final method of treatment.
3. The developed therapeutic and diagnostic algorithm for staged surgical treatment, depending on the prevalence of the clinic of destructive cholecystitis or obstructive cholangitis using CHMHS under ultrasound guidance, EPST or a combination thereof, made it possible at the subsequent stage of treatment to perform cholecystectomy by the laparoscopic method in 19.6% and from minilaparotome access - 64.9%.
4. Optimization of the tactical and technical aspects of surgical treatment of elderly and senile patients with complicated forms of GKB, taking into account the severity of the patient's condition and the projected risk of developing postoperative complications with the priority stage use of minimally invasive interventions, significantly reduced mortality, postoperative purulent-septic and extra-abdominal complications (3.1%, 12.4% and 29.9%, respectively), whereas in the comparison group these indicators were 8.1%, 32.4% and 41.9%.

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